#### **ENVIRONMENTAL CHEMISTS**

Date of Report: July 13, 1993 Date Received: July 8, 1993

Project: 7238, Free Liquid Testing, PO #M29778

Date Samples Extracted: July 8, 1993 Date Extracts Analyzed: July 8, 1993

# RESULTS FROM THE ANALYSIS OF THE PROCESS WATER SAMPLE FOR TOTAL DISSOLVED METALS

Samples Processed Using Method 3005 Results Reported as µg/g (ppm)

Sample ID	<u>Chromium</u>	Copper	<u>Nickel</u>	<u>Zinc</u>
M29778	<0.01	0.05	0.30	0.74
Quality Assurance	<u>e</u>			
Blank	<0.01	<0.01	<0.02	<0.02
Spike Blank % Recovery	107%	99%	109%	108%
Spike Level	5	5	10	5

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: July 13, 1993 Date Received: July 8, 1993

Project: 7238, Free Liquid Testing, PO #M29778

Date Samples Extracted: July 8, 1993 Date Extracts Analyzed: July 8, 1993

## RESULTS FROM THE ANALYSIS OF THE PROCESS WATER SAMPLE FOR CHROMIUM, COPPER, NICKEL AND ZINC Samples Processed Using Method 3050

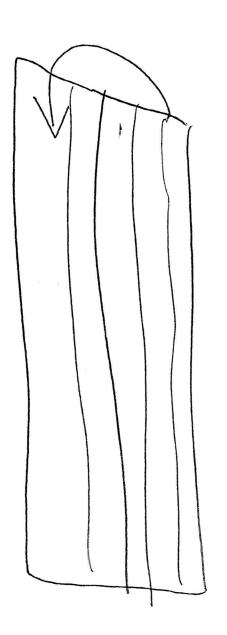
Results Reported as µg/g (ppm)

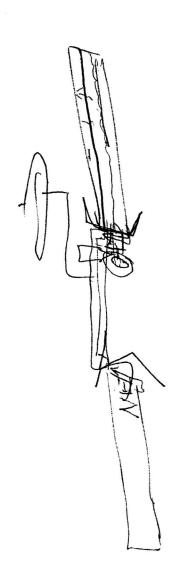
Sample ID	<u>Chromium</u>	<u>Copper</u>	Nickel	<u>Zinc</u>
M29778	75	34	75	14
Quality Assurance				
Blank	<1.0	<1.0	<1.0	<1.0
M29778 (Duplicate)	64	29	60	15
M29778 (Matrix Spike) % Recovery	120%	104%	107%	98%
M29778 (Matrix Spike Duplicate) % Recovery	84%	85%	91%	110%
Spike Blank % Recovery	107%	99%	109%	108%
Spike Level	25	25	50	25

FRIEDMAN & BRUJA, INC. 3008-B 16th Avenue West Seattle, WA 98119

#### SAMPLE CHAIN OF CUSTODY

Management To: Masking Const. Weath Contact Greek Though deress (228 Habriel St.)  We start to List 98134  Moore # (226) 623 - 5800 X218  SITE NO. PROJECT NAME  PROJECT NAME  PROJECT LOCATION  STEND. PROJECT NAME  PROJECT LOCATION  33.77 CHA Ave.  SAMPLE DISPOSAL INFORM.  SAMPLE DISPOSAL INFORM.  SAMPLE BISPOSAL INFORM.  SAMPLE # Dute/Time Sample Gall for Instructions  SAMPLE # Dute/Time Sample Jars Bequested  M 29 778 A 7893 7.30 H 20 1 41537 CR CM M. ZN DRO  AND 27 778 A 7893 7.30 H 20 1 CR CM N. ZN DRO  We sample # Description of the Control of the Con		J SAMP DE	CILAMY		SIODI			
AMPLE BONATURE  PRINT NAME  SAMPLE BONATURE  PRINT NAME  SONATURE  PRINT NAME  COMMANY  Date  Time  Solvent of Jack Commander  Alaskan Copyer Was 7/8/2 8:19  Reignieut by  Analyses  Sonature  Print NAME  SONATURE  PRINT NAME  COMMANY  Date  Time  Solvent by  Alaskan Copyer Was 7/8/2 8:19  Reignieut by  Reignieu	end Report To:	Works		Combonet	Ger-12	Thomas	e. )	
THE NO. PROJECT NAME  SITE NO. PROJECT NAME  PROJECT LOCATION  STEND. PROJECT NAME  PROJECT LOCATION  SAMPLERS (spinature)  SAMPLERS	ddress 628 HA-Son	: 50		_ Contact	CELLIC	1. Eng	»~	
STE NO. PROJECT NAME  PURCHASE ORDER #  7238  FREE L. Q. L. Leyt 4  M 29 778  PROJECT LOCATION  33/7 LA Ave.  SAMPLE BISPOSAL INFORM.  SEE BRAD  Dute/Time Sample 4 of Lab Analyses  Sample 8 Requested  M 29 778  A 20 778  A	City, State, Zip Seattle 6	M 98134		1)	2 Q Q-7			
7238 FREE L. and testing M29778  SAMPLE ISOSAL INFORM.  SEE BRAND  BAMPLE ISOSAL INFORM.  SAMPLE INFORMATION.  SAMPLE INFORMATION	hone # (266) (62) - 380	) <u> </u>		_ Date	7-0-15			
SAMPLE ISPOSATURE  PROJECT LOCATION  33/7 6th Ave.  SAMPLE DISPOSA AIR 70 days Return Samples  Sample Sample Sample  Sample Bequested  M 29778 74/45 770 1/20, 1 41/53 CR Cu W. Zw Dro  M 29778 A 7893 230 420 1 CR Cu W. Zw Dro  M 29778 A 7893 230 420 1 CR Cu W. Zw Dro  M 29778 A 7893 230 420 1 CR Cu W. Zw Dro  M 29778 A 7893 230 420 1 CR Cu W. Zw Dro  M 29778 A 7893 230 420 1 CR Cu W. Zw Dro  M 29778 A 7893 230 420 1 CR Cu W. Zw Dro  M 29778 A 7893 230 420 1 CR Cu W. Zw Dro  M 29778 A 7893 230 420 1 CR Cu W. Zw Dro  M 29778 A 7893 230 420 1 CR Cu W. Zw Dro  M 29778 A 7893 230 420 1 CR Cu W. Zw Dro  M 29778 A 7893 230 420 1 CR Cu W. Zw Dro  M 29778 A 7893 230 420 1 CR Cu W. Zw Dro  M 29778 A 7893 230 420 1 CR Cu W. Zw Dro  M 29778 A 7893 230 4 CR	SITE NO.	PROJECT NAME	<del></del>		PURCHA	ASE ORDE	R#	
REMARKS  REMARKS  REMARKS  SAMPLE DISPOSAL INFORM.  Dispose after 30 days Return Samples  Call for Instructions  Sample # Date/Time Sample # Sample # Return Samples  M 29778  A 78/43 2 75 1/20, 1 41537 CR Cu W 2 PRO  M 29778 A 7893 2 30 H 20 1 CR Cu W 2 PRO  M 29778 A 7893 2 30 H 20 1 CR Cu W 2 PRO  REMARKS  SAMPLE # Date/Time Sample # Requested  M 29778 A 7893 2 30 H 20 1 CR Cu W 2 PRO  REMARKS  SAMPLE DISPOSAL INFORM.  OR Cu W 2 PRO  REMARKS  SAMPLE DISPOSAL INFORM.  DISPOSAL INFORM.  CR Cu W 2 PRO  REMARKS  SAMPLE DISPOSAL INFORM.  CR Cu W 2 PRO  REMARKS  A 153 PRO  REMARKS  SAMPLE DISPOSAL INFORM.  DISPOSAL INFORM.  CR Cu W 2 PRO  REMARKS  A 153 PRO  REMARKS  SAMPLE DISPOSAL INFORM.  DISPOSAL INFORM.  CR Cu W 2 PRO  REMARKS  A 153 PRO  REMARKS  SAMPLE DISPOSAL INFORM.  DISPOSAL INFORM.  CR Cu W 2 PRO  REMARKS  A 153 PRO  REMARKS  SAMPLE DISPOSAL INFORM.  DISPO	7238 · F	Free Livid	lest, a		m29	7778	3	E a
REMARKS  SAMPLE DISPOSAL INFORM.  SEE BRAC  DUTE TIME Sample Sample Dute/Time Sample Sample Date Time Sample Date Date Date Date  M 29778 789/43 7.70 1/20, 1 41535 CR Cu N. Z~ DRO  M 29778 A 7893 1.30 1/20 1 CR Cu N. Z~ DRO  M 29778 A 7893 1.30 1/20 1 CR Cu N. Z~ DRO  M 29778 A 7893 1.30 1/20 1 CR Cu N. Z~ DRO  M 29778 A 7893 1.30 1/20 1 CR Cu N. Z~ DRO  M 29778 A 7893 1.30 1/20 1 CR Cu N. Z~ DRO  M 29778 A 7893 1.30 1/20 1 CR Cu N. Z~ DRO  M 29778 A 7893 1.30 1/20 1 CR Cu N. Z~ DRO  M 29778 A 7894 A 7893 1.30 1/20 1 CR Cu N. Z~ DRO  M 29778 A 7894 A 7893 1.30 1/20 1 CR Cu N. Z~ DRO  M 29778 A 7894 A 7893 1.30 1/20 1 CR Cu N. Z~ DRO  M 29778 A 7894 A 7893 1.30 1/20 1 CR Cu N. Z~ DRO  M 29778 A 7894 A	SAMPLERS (signature)				PROJEC	CT LOCATION	ON	
SEE. BRAL  Dute/Time Sample # of Sample # of Sample # Requested  M 29778 78/43 270 1/20, 1 41535 CR CR CR N. Z. Dro  AN 29778 7893 1:30 1/20 1 CR CR N. Z. Dro  AN 29778 7893 1:30 1/20 1 CR CR CR N. Z. To  AN 29778 A To  BROWNTURE PRINT NAME COMPANY Date Time  REPLYWING BY BRINT NAME COMPANY Date Time  REPLYWING BY BRINT NAME COMPANY BRINT B	2/9/							
SAMPLE # Dute/Time Type of Sample   Sample   Sample   Requested    M 29778   7893 270 1/20   41535   CR Cu w. Zw Diso  M 21778   7893 2730 1/20   CR Cu w. Zw Diso  M 21778   Total	REMARKS			······································	<del></del>			<del></del>
## Sample   Sample   Jars   Sample   Requested	SEE. BRAD		·		22	Return Sar	nples	
M 29778 7893 7.70 H2O, 1 41535 CR CU M. ZN DRO M 29778 A 7893 7.30 H2O 1 CR CU M. ZN TO TO M 29778 A 7893 7.30 H2O 1  CR CU M. ZN TO TO TO M 29778 A 7893 7.30 H2O  RECOMPANY Date Time Manufacture by:  Second A Thompson Alaskan Copyer Week, 7/0/5 8:19  Redirquished by:  But Bund Basson . Fo 13  18/13 8:19	SAMPLE #							
SIGNATURE PRINT NAME COMPANY Date Time Restricted by:  SIGNATURE PRINT NAME COMPANY Date Time Restricted by:  SIGNATURE PRINT NAME COMPANY Date Time Restricted by:  Restricted by:  Signatured by:  Signatured by:  Bright Berner Brief Bonson . F. B. 7/8/93 8:19	00:00 A		,	Jars			<del></del>	$\overline{}$
SIGNATURE PRINT NAME COMPANY Date Time Refinalished by:  Britished	M 29 +48		t/20,		71777	CR	Cu Wi Z	
SIGNATURE PRINT NAME COMPANY Date Time Refinitional by:  Refinitio	M 29738 A	7/893 7:30	H20 -			CR	Com	2ml ( 700
SIGNATURE PRINT NAME COMPANY Date Time Refinitional by:  Refinitio	180 A							
BIONATURE PRINT NAME COMPANY Date Time  Red without by:  GERALD A Thompson Alaskan Copper week 7/8/2 8:19  Bridley Bern Brid Bonson FAB 18/93 8:19  Relinquished by:		··.						
BIONATURE PRINT NAME COMPANY Date Time  Red without by:  GERALD A Thompson Alaskan Copper week 7/8/2 8:19  Bridley Bern Brid Bonson FAB 18/93 8:19  Relinquished by:								N 1
SIGNATURE PRINT NAME COMPANY Date Time Reflected by:  Bridley Berner Band Borson . F. B. 7/8/9 8:19  Relinquished by:						<b>-</b>	***************************************	
SIGNATURE PRINT NAME COMPANY Date Time Reflected by:  Bridley Berner Band Borson . F. B. 7/8/9 8:19  Relinquished by:						-		
SIGNATURE PRINT NAME COMPANY Date Time Reflected by:  Bridley Berner Band Borson . F. B. 7/8/9 8:19  Relinquished by:				<del> </del>				
SIGNATURE PRINT NAME COMPANY Date Time Refrauction by:  GERALD A Thompson A/Askan Copyren Water 7/8/2 8:19  Reflicted by:  Redirect by:  Relinquished by:			<u> </u>					
SIGNATURE PRINT NAME COMPANY Date Time Redraguished by:  Redired by:  Brad Boyson . F. B. 7/8/3 8:19  Redired by:  Redired by:	Y							
SIGNATURE PRINT NAME COMPANY Date Time Refraulished by:  Reflived by:  Brad Boyson . F. B. 7/8/3 8:19  Rediriquished by:								
BIGNATURE PRINT NAME COMPANY Date Time  Redinquished by:  GEREIL A. Thompson Alaskan Copper Work 7/8/8 8:19  Redinquished by:  Bridles/ Benson Bonson FJ B 7/8/9 8:19			E					* 1 * 9 * 1 * 1 * 1 * 1 * 1
BIGNATURE PRINT NAME COMPANY Date Time  Redinquished by:  GEREIL A. Thompson Alaskan Copper Work 7/8/8 8:19  Redinquished by:  Bridles/ Benson Bonson FJ B 7/8/9 8:19						٠,		
Reproduished by:  Braddy Bense Bonson FAB 18/9 8:19  Relinquished by:								
Refriguished by:  Bradd Borson FAB 7/8/3 8:19  Redirquished by:				1				
Redired by:  Redired by:  Redired by:  Brad Boyson . FAB 7/8/8 8:19  Relinquished by:				-				
Redired by:  Redired by:  Redired by:  Brad Boyson . FAB 7/8/8 8:19  Relinquished by:								
Redired by:  Redired by:  Redired by:  Brad Boyson . FAB 7/8/8 8:19  Relinquished by:	MONAMI IDIS	I BOUND NAME			.			
Bridly Fleren Brud Boyson . 52 B 7/8/93 8:19 Relinquished by:		T 0				T		Time
Relinquished by:  Brud Borson . 52 /5 7/8/93 8:19	And The	GERAL A.	Thompson	AlAs	KAN COPU	enlibeter	7/8/2	8:19
	Budles & Dense	Brud Bon	son.	50	B		18/93	8:19
Received by:	Relinquished by:	al.						Shows "
	Received by:						િક શુંહ,	





#### **ENVIRONMENTAL CHEMISTS**

Andrew John Friedman James E. Bruya, Ph.D. (206) 285-8282

## **DUPLICATE COPY**

3008-B 16th Avenue West Seattle, WA 98119 FAX: (206) 283-5044

July 13, 1993

### **INVOICE #93ACU0713-1**

Alaskan Copper Works 628 South Hanford Seattle, WA 98134

RE: Project 7238, Free Liquid Testing, PO #M29778: Results of testing requested by Gerry Thompson, Project Leader and submitted on July 8, 1993.

1 process water sample analyzed for Total Dissolved	
Metals @ \$65 per sample	\$ 65.00
1 process water sample analyzed for Chromium, Copper,	
Nickel and Zinc @ \$65 per sample	<u>65.00</u>
Amount Due	\$ 130.00

## **ENVIRONMENTAL CHEMISTS**

Andrew John Friedman James E. Bruya, Ph.D. (206) 285-8282 3008-B 16th Avenue West Seattle, WA 98119 FAX: (206) 283-5044

July 13, 1993

Gerry Thompson, Project Leader Alaskan Copper Works 628 South Hanford Seattle, WA 98134

Dear Mr. Thompson:

Enclosed are the results from the testing of material submitted on July 8, 1993 from Project 7238, Free Liquid Testing, PO #M29778.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

Bradley T. Benson

Chemist

BTB/dp

**Enclosures**